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Application No.: 10/658,174

Docket No.: JCLA10514

REMARKS

Present Status of Application

This is a full and timely response to the outstanding non-final Office Action mailed on June 05, 2006. The Office Action has rejected to claims 8-11 under 35 U.S.C. 102(b) as being anticipated by Koshoubo et al. (U.S. Pat. No. 5,966,111, "Koshoubo" hereinafter). The Office Action has rejected to claims 1-4 and 15-18 under 35 USC§103(a) as being unpatentable over Koshoubo in view of Scheffer et al. (U.S. Pat. No. 5,459,495, "Scheffer" hereinafter). The Office Action has rejected to claims 5-7 and 19-21 under 35 USC§103(a) as being unpatentable over Koshoubo in view of Scheffer, and further in view of Chang et al. (U.S. Pat. No. 6,611,247, "Chang" hereinafter).

Applicants have amended claims 1, 2, 4, 5, 8, 9 and 11 and cancelled claims 2, 10 and 15-21. New claims 22 and 23 is added in the present application. After entry of the foregoing amendments, claims 1, 2, 4-9, 11-14 and 22-23 remain pending in the present application. It is believed that no new matter is added by way of these amendments made to the claims or otherwise to the application.

Applicant has most respectfully considered the remarks set forth in this Office Action. Regarding the obvious rejections, it is however strongly believed that the cited references are deficient to adequately teach the claimed features as recited in the presently pending claims. The reasons that motivate the above position of the Applicant are discussed in detail hereafter, upon which reconsideration of the claims is most earnestly solicited.

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Discussion of the Rejections

The Office Action has rejected to claims 8-11 under 35 U.S.C. 102(b) as being anticipated by Koshoubu. The Office Action has rejected to claims 1-4 and 15-18 under 35 USC§103(a) as being unpatentable over Koshoubu in view of Scheffer. The Office Action has rejected to claims 5-7 and 19-21 under 35 USC§103(a) as being unpatentable over Koshoubu in view of Scheffer, and further in view of Chang.

Rejections to Independent claims 1 and 8

Responsive to the rejection, Applicants have amended independent claims 1 and 8, and respectfully traverse the rejections.

With respect to claim 1, as amended, recites:

A double waveform method for driving a transmission line originally at an initial voltage on the transmission line to a final voltage, the double waveform method comprising:

finding a first voltage, a second voltage, a first voltage maintenance period and a second voltage maintenance period according to the initial voltage and the final voltage;

applying the first voltage on the transmission line for a time period equal to the first voltage maintenance period; and

applying the second voltage on the transmission line for a time period equal to the second voltage maintenance period; and

applying the final voltage on the transmission line. (Emphasis Added)

With respect to claim 8, as amended, recites:

A double waveform method for driving a signal through a transmission line, comprising:

putting a first voltage on the transmission line for a first period of time;

putting a second voltage on the transmission line for a second period of time,

wherein the first period of time and the second period of time are configured according to an initial voltage of the signal and a final voltage which is desired to be obtained on the transmission line; and

putting a final voltage on the transmission line. (Emphasis Added)

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As admitted in the Office Action, the Koshoubu reference fails to teach of “finding a first voltage, a second voltage, a first voltage maintenance period and a second voltage maintenance period according to the initial voltage and the final voltage; putting up the first voltage on the transmission line for a time period equal to the first voltage maintenance period; putting up the second voltage on the transmission line for a time period equal to the second voltage maintenance period.” Applicants respectfully traverse the rejection under 35 U.S.C. 102(b) as being anticipated by Koshoubu in view of amendments addressed to claim 8.

Regarding the rejections under 35 USC§103(a), the Office Action relied on the disclosure in Col. 5, Lines 7-35 of the Scheffer reference to remedy the deficiency of the Koshoubu reference. More particularly, the Office Action indicated that it would have been obvious to “one of ordinary skill” in the art at the time the invention made to use the method of determining the first and second maintenance period as taught in the Scheffer reference with the double waveform method taught in the Koshoubu reference such that voltages V_{wp} and V_{wn} would be found dependent of the initial and final voltages in order to provide a number of gray levels for an LCD by modulating the amplitude or pulse height of the display column drive signals so that no matter how many gray levels are generated, there is no significant increase in high frequency components in the column signals. Applicants do not agree with such assertions.

First of all, Applicants submit that the Scheffer reference is not reasonably pertinent to the particular problem with which Applicants was concerned. The claimed invention is related to provide a method for driving signals through a transmission line capable of increasing transmission speed while maintaining waveform stability and accuracy. By configuring a first period of time and a second period of time according to an initial voltage of the signal and a final voltage which is desired to be obtained on the transmission line, the method utilizes the charging/discharging action in the equivalent capacitor/resistor elements spread out along the transmission line to bring the signal voltage at the end of the transmission line to the desired voltage level quickly and accurately. (Para. [0009] of Summary of the Invention)

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However, the Scheffer reference is pertinent to "Method and apparatus for providing gray level addressing for passive liquid crystal display (LCD) panels having overlapping row and column electrodes defining pixels are disclosed." Depending upon whether the rows are being addressed by "standard" or "Swift" addressing, the signals for applying to the column electrodes are determined by different calculations, in all of which modes the amplitudes of the column signals are related to the gray level desired to be displayed by the individual pixels. (Abstract) The Scheffer reference is not pertinent to applying an initial voltage of the signal and a final voltage which is desired to be obtained on the same transmission line as defined in the invention, instead, the Scheffer reference teaches that "the amplitudes of the column signals are related to the gray level desired to be displayed are determined by the individual pixels", which is not reasonably pertinent to the particular problem with which Applicants was concerned. As held in MPEP §2141.01(a) and the case law cited thereat, i.e., *In re Oetiker*, the Scheffer reference cannot be relied on as a basis for rejection of the claimed invention.

Furthermore, in determining the difference between the prior art and the claims, the Office Action has admitted that the Koshoubu fails to teach of "finding a first voltage, a second voltage, a first voltage maintenance period and a second voltage maintenance period according to the initial voltage and the final voltage; putting up the first voltage on the transmission line for a time period equal to the first voltage maintenance period; putting up the second voltage on the transmission line for a time period equal to the second voltage maintenance period.". Therefore, the Office Action cited the Scheffer as a secondary reference to modify the Koshoubu, while the motivation given by the Office Action is "the S+D is the first voltage, S-D is the second voltage, f is the first voltage maintenance period, and 1-f is a second voltage maintenance period as taught in the Scheffer reference".

However, the Scheffer still fails to teach or suggest the feature of "finding a first voltage, a second voltage, a first voltage maintenance period and a second voltage maintenance period according to the initial voltage and the final voltage" as claimed in claim 1, and the feature of "first period of time and the second period of time are configured according to an initial voltage of the signal and a final voltage which is desired to be obtained on the transmission line" as

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claimed in amended claim 8. More particularly, the Scheffer still fails to teach or suggest the feature of considering the final voltage which is desired to be obtained on the transmission line to determine the first voltage, second voltage, first voltage maintenance period and second voltage maintenance period in the present invention.

Moreover, Applicants submit that the combination of the Koshoubu and the Scheffer can not render the claimed invention obvious. In the Koshoubu, it is stated that "the duration of the holding period can be made constant by adjusting the duration of the blanking period corresponding to the variation in the transmission cycle, which is to be determined by actually measuring the transmission cycle of the picture data concerned" (Col.2, Lines 13-16 of Summary of the Invention in the Koshoubu) The proposed principle in the Koshoubu is related to adjusting the duration of the blanking period corresponding to the variation in the transmission cycle, not adjusting the voltages Vwp and Vwn of FIG.3 of the Koshoubu, as proposed by the Office Action. The proposed modification in the Office Action has basically destroyed the principle of operation of the Koshoubu.

Since it is held that "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious", Applicants submit that the present invention as set forth in claims 1 and 8 are unobvious, and patentable over the Koshoubu, Scheffer, or any of the other cited references, taken alone or in combination, and thus should be allowed. MPEP §2143.01 and the case law cited thereat, *In re Ratti*, 270 F. 2d 810, 123 USPQ 349 (CCPA 1959).

Rejections To Dependent Claims 2, 4-7, 9 And 11-14

If independent claims 1 and 8 are allowable over the prior art of record, then its dependent claims 2, 4-7, 9 and 11-14 are allowable as a matter of law, because these dependent claims contain all features/elements/steps of their respective independent claims 1 and 8. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

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Additionally and notwithstanding the foregoing reasons for the allowability of claims 1 and 8, these dependent claims recite further features that are patentably distinct from the prior art of record. Hence, there are other reasons why these dependent claims are allowable.

For example, as defined in amended claims 2 and 9, "if the final voltage is higher than the initial voltage, the first voltage is configured to be higher than the final voltage and the second voltage is lower than the final voltage, and if the final voltage is lower than the initial voltage, the first voltage is configured to be lower than the final voltage and the second voltage is higher than the final voltage." In the invention, the charging/discharging action is used in the equivalent capacitor/resistor elements spread out along the transmission line to bring the signal voltage at the end of the transmission line to the desired voltage level quickly and accurately.

If the final voltage is higher than the initial voltage, the first voltage is configured to be higher than the final voltage for charging the equivalent capacitor/resistor elements spread out along the transmission line in advance. The second voltage is configured to be lower than the final voltage for discharging the equivalent capacitor/resistor elements spread out along the transmission line. By doing so in advance, when the final voltage is applied on the transmission line, the method for driving signals through the transmission line is capable of increasing transmission speed while maintaining waveform stability and accuracy.

On the contrary, if the final voltage is lower than the initial voltage, the first voltage is configured to be lower than the final voltage for discharging the equivalent capacitor/resistor elements spread out along the transmission line in advance. The second voltage is configured to be higher than the final voltage for charging the equivalent capacitor/resistor elements spread out along the transmission line. By doing so in advance, when the final voltage is applied on the transmission line, the method for driving signals through the transmission line is capable of increasing transmission speed while maintaining waveform stability and accuracy.

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New Claims

New claims 22 and 23 are added for further defining the invention. As describe above, the invention is related to provide a method for driving signals through a transmission line capable of increasing transmission speed while maintaining waveform stability and accuracy. The claimed method utilizes the charging/discharging action in the equivalent capacitor/resistor elements spread out along the transmission line to bring the signal voltage at the end of the transmission line to the desired voltage level quickly and accurately. (Para. [0009] of Summary of the Invention). Applicants submit that the new claims 22 and 23 are novel and patentable over all of the cited references, taken alone or in combination, and thus should be allowed.

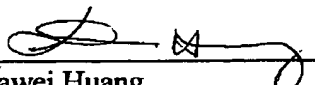
CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1, 2, 4-9, 11-14 and 22-23 are in proper condition for allowance and an action to such effect is earnestly solicited. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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4 Venture, Suite 250
Irvine, CA 92618
Tel.: (949) 660-0761
Fax: (949)-660-0809

Respectfully submitted,
J.C. PATENTS


Jiawei Huang
Registration No. 43,330